Amendments to the Claims

Please replace all prior versions and listings of claims with the following listing of claims.

1. (**Previously Presented**) A lithographic apparatus comprising:

an illumination system configured to condition a beam of radiation;

a support structure configured to support a patterning structure, the patterning structure configured to impart a pattern to the beam to form a patterned beam;

a substrate table configured to hold a substrate; and

a projection system configured to project the patterned beam onto a target portion of the substrate, wherein the patterning structure comprises an aluminium absorber layer with a protective top coating having a thickness of about 0.1 nm to about 5 nm and wherein the patterning structure improves imaging by eliminating or at least minimising the formation of aberrations in the patterned beam.

2. (**Original**) A lithographic apparatus according to claim 1, wherein the aluminium forms a substantially flat absorber surface.

3. (**Original**) A lithographic apparatus according to claim 1, wherein the aluminium has a thickness which is substantially constant.

4. (**Original**) A lithographic apparatus according to claim 1, wherein the aluminium has a thickness of about 50 nm to about 200 nm.

5. (**Original**) A lithographic apparatus according to claim 1, wherein the aluminium has a thickness of about 70 nm.

6. (**Original**) A lithographic apparatus according to claim 1, wherein the aluminium has a protective top coating of any of aluminium oxide, aluminium nitride, chromium oxide, ruthenium, niobium or any combination thereof.

7. (**Canceled**)

8. (**Original**) A lithographic apparatus according to claim 6, wherein the protective top coating has a thickness of about 1 nm.

9. (**Original**) A lithographic apparatus according to claim 1, wherein the patterning structure comprises a bottom substrate material with a low coefficient of thermal expansion (CTE).

10. (**Original**) A lithographic apparatus according to claim 1, wherein beneath the aluminium absorber layer there is a series of alternating layers of high index refraction material and low index refraction material.

11. (**Original**) A lithographic apparatus according to claim 10, wherein there are about 20 to about 80 layers of high and low index refraction material.

12. (**Original**) A lithographic apparatus according to claim 10, wherein combinations of high and low index refraction material are as follows: Mo/Si; Ru/Si; Ru-Mo/Si; Rh/Si; Pd/Si; Pt/Si; Mo/Y; Ru-Mo/Y; or Mo alloys and Si alloys.

13. (**Original**) A lithographic apparatus according to claim 10, wherein the high and low index refraction material have a thickness of about 1 nm to about 10 nm.

14. (**Original**) A lithographic apparatus according to claim 10, wherein between the high and low index refraction material there is a barrier layer.

15. (**Original**) A lithographic apparatus according to claim 1, wherein the patterning structure further comprises a buffer layer.

16. (**Original**) A lithographic apparatus according to claim 15, wherein the buffer layer is silicon dioxide.

17. (**Original**) A lithographic apparatus according to claim 1, wherein the projection system comprises means for reflecting or refracting the projection beam.

18. (**Original**) A lithographic apparatus according to claim 1, wherein the radiation is Extreme Ultra-Violet radiation (EUV).

19. (**Original**) A lithographic apparatus according to claim 1, wherein the radiation has a wavelength of between about 5 nm and about 20 nm.

20. (**Previously Presented**) A device manufacturing method comprising: projecting a patterned beam of radiation onto a target portion of a substrate; and

minimizing formation of aberrations in the patterned beam by using a patterning structure having an aluminium absorber layer with a protective top coating having a thickness of about 0.1 to about 5 nm.

21. (**Original**) A device manufacturing method according to claim 20, wherein the aluminium forms a substantially flat surface.

22. (**Original**) A device manufacturing method according to claim 20, wherein the aluminium has a thickness which is substantially constant.

23. (**Original**) A device manufacturing method according to claim 20, wherein the aluminium has a thickness of about 50 to about 200 nm.

24. (**Original**) A device manufacturing method according to claim 20, wherein the aluminium has a thickness of about 70 nm.

25. (**Original**) A device manufacturing method according to claim 20, wherein the aluminium has a protective top coating of any of aluminium oxide, aluminium nitride, chromium oxide, ruthenium, niobium or any combination thereof.

26. (**Canceled**)

27. (**Original**) A device manufacturing method according to claim 20, wherein the protective top coating has a thickness of about 1 nm.

28. (**Original**) A device manufacturing method according to claim 20, wherein the patterning structure comprises a material with a low CTE.

29. (**Original**) A device manufacturing method according to claim 20, wherein beneath the aluminium absorber layer there is a series of alternating layers of high index refraction material and low index refraction material.

30. (**Original**) A device manufacturing method according to claim 29, wherein there are about 20 to 80 layers of high and low index refraction material.

31. (**Original**) A device manufacturing method according to claim 29, wherein combinations of high and low index refraction material are as follows: Mo/Si; Ru/Si; Ru-Mo/Si; Rh/Si; Pd/Si; Pt/Si; Mo/Y; Ru-Mo/Y; Ru-Mo/Y; or Mo alloys and Si alloys.

32. (**Original**) A device manufacturing method according to claim 29, wherein the high and low index refraction material have a thickness of about 1 nm to about 10 nm.

33. (**Original**) A device manufacturing method according to claim 29, wherein between the high and low index refraction material there is a barrier layer.

34. (**Original**) A device manufacturing method according to claim 20, wherein the patterning structure further comprises a buffer layer.

35. (**Original**) A device manufacturing method according to claim 34, wherein the buffer layer is silicon dioxide.

36. (**Original**) A device manufacturing method according to claim 20, wherein the beam is projected using reflective or refractive means.

37. (**Original**) A device manufacturing method according to claim 20, wherein the radiation is Extreme Ultra-Violet radiation (EUV).

38. (**Original**) A device manufacturing method according to claim 20, wherein the radiation has a wavelength of between about 5 nm and about 20 nm.

39. (**Previously Presented**) A patterning structure comprising:

a layer of material with a low coefficient of thermal expansion (CTE); and

an aluminium coating with a protective top coating having a thickness of about 0.1 to about 5 nm, wherein the aluminium coating is an absorber layer which imparts the pattern to a beam of radiation.

40. (**Original**) A patterning structure according to claim 39, wherein the aluminium comprises a substantially flat absorber surface.

41. (**Original**) A patterning structure according to claim 39, wherein the aluminium has a thickness which is substantially constant.

42. (**Original**) A patterning structure according to claim 39, wherein the aluminium has a thickness of about 50 nm to about 200 nm.

43. (**Original**) A patterning structure according to claim 39, wherein the aluminium has a thickness of about 70 nm.

44. (**Original**) A patterning structure according to claim 39, wherein the aluminium has a protective top coating of any of aluminium oxide, aluminium nitride, chromium oxide, ruthenium, niobium or any combination thereof.

45. (**Canceled**)

46. (**Original**) A patterning structure according to claim 44, wherein the protective top coating has a thickness of about 1 nm.

47. (**Original**) A patterning structure according to claim 39, wherein the patterning structure comprises a bottom substrate material with a low coefficient of thermal expansion (CTE).

48. (**Original**) A patterning structure according to claim 39, wherein beneath the aluminium absorber layer there is a series of alternating layers of high index refraction material and low index refraction material.

49. (**Original**) A patterning structure according to claim 48, wherein there are about 20 to about 80 layers of high and low index refraction material.

50. (**Original**) A patterning structure according to claim 48, wherein combinations of high and low index refraction material are as follows: Mo/Si; Ru/Si; Ru-Mo/Si; Rh/Si; Pd/Si; Pt/Si; Mo/Y; Ru-Mo/Y; or Mo alloys and Si alloys.

51. (**Original**) A patterning structure according to claim 48, wherein the high and low index refraction material have a thickness of about 1 nm to about 10 nm.

52. (**Original**) A patterning structure according to claim 48, wherein between the high and low index refraction material there is a barrier layer.

53. (**Original**) A patterning structure according to claim 39, wherein the patterning structure further comprises a buffer layer.

54. (**Original**) A patterning structure according to claim 53, wherein the buffer layer is silicon dioxide.

55. (**Previously Presented**) A method of forming a patterning structure for use in a lithographic apparatus, the method comprising:

providing a layer of material which has a low coefficient of thermal expansion (CTE);

depositing a series of alternating layers of high index refraction material and low index refraction material onto the layer of material with a low coefficient of thermal expansion (CTE);

depositing a buffer layer onto the series of alternating layers of high index refraction material and low index material;

depositing an aluminium absorber layer onto said buffer layer; and

forming a protective coating having a thickness of about 0.1 to about 5 nm on top of the aluminium absorber.

56. (**Original**) A method according to claim 55 wherein a radiation-sensitive layer is deposited onto the protective coating and is then etched to form a pattern.

57. (**Original**) A method according to claim 55 wherein the etching process comprises a reactive ion etch process and dry etching processes.

58-62. (**Canceled**)